PATENT
Docket No.: PD-99-377/009774
Attorney Docket No.: BOE 0274 PA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

1/Appeal Brief

In Re Application of

James K. Guy

Group Art Unit: 2875

G. Stanly 7-28-03

Serial No.: 10/022,881

Examiner: M. Dalakis

Filed: July 7, 2001

FOR: IRIS WITH INTEGRATED DRIVE MOTOR

Attorney Docket No.: PD-200267/LP#008368 (BOE 0274 PA)

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))

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Date: 7/22/2003

Latitia Ford

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed on May 23, 2003, for the above-identified application.

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I. Real Party in Interest

The real party in interest in this matter is the Boeing Satellite Systems located in Seal Beach, California (hereinafter "Boeing").

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-5, 9-13 and 17-22 were rejected in the Office Action dated 04/24/2003. A copy of the claims on appeal is attached as Appendix A.

IV. Status of Amendments Filed after Final

There have been no amendments filed subsequent to the final rejection

V. Summary of the Invention

The present invention is an iris, which includes a stator assembly having a frame coupled to an electrically wound, substantially annular magnetic core. The iris further includes a rotor, which is rotatably coupled to the magnetic core such that a channel is defined. A diaphragm, having a plurality of diaphragm leaves, is coupled to the stator assembly. The diaphragm leaves are pivotally arranged to form an adjustable aperture, which is substantially concentric with the channel. A portion of at least one of the diaphragm leaves is coupled to the stator assembly, and another portion of another one of the plurality of diaphragm leaves is coupled to the rotor.

The present invention thus achieves an improved iris system having a high degree pf freedom of rotation between the rotor and the stator while eliminating the need for a gear

train between the drive motor and iris.

VI. Issues

The following issues are presented in this appeal, each of which corresponds directly to the Examiner's final ground for rejection and the Final Office Action:

Whether claims 1-5, 9-13 and 17-22 are patentable under 35 U.S.C. § 102(b) over *Devenyi* et al. (US Patent 5,955,806).

VII. Grouping of Claims

The rejected claims have been grouped together by the Examiner in the rejection. The Appellant states, however, that each of the rejected claims stands on its own recitation and is separately patentable for the reasons set forth in detail below.

VIII. Argument

Claim 1 stands finally rejected under 35 U.S.C. §102(b) over *Devenyi* et al. (US Patent 5,955,806).

According to the Office Action, *Devenyi* discloses a torque motor having an annular cylindrically symmetric stator and rotor. The stator includes a frame and multiple magnets mounted thereon. The rotor is rotatably coupled to the annular magnet member and defines a channel. Also according to the Office Action, a diaphragm is coupled to the stator via a pin and to the rotor via a pin. The diaphragm includes leaves pivotally arranged to form an adjustable aperture.

The Applicant respectfully submits that claims 1, 9 and 17 are novel and non-obvious because the claims and the prior art differ. The system in *Devenyi* is conventional in that the "driver pins 65 extend axially from the support base 30 and pass through slots 66 in the end of the rotor ring." (column 3, lines 52-59). *Devenyi* does not disclose that the pins originate

from a portion of the diaphragm as is claimed in claims 1, 9, and 17. Appellant claims, "a first portion of at least one of said plurality of diaphragm leaves coupled to said stator, a second portion of another of said plurality of diaphragm leaves coupled to said rotor." The first portion and second portion are, however, coupled to the rotor and stator coupled through pivot pins on the diaphragm. (see paragraph 0030). *Devenyi* does not disclose or suggest an embodiment including a portion of one diaphragm leaf coupled to the rotor and a portion of another diaphragm leaf coupled to the stator.

The structure of the diaphragm including the potions having pins described by the Applicant is advantageous in that it facilitates assembly, and reduces costs because the task of aligning the diaphragm portions with the rotor and stator is simplified.

Additionally, the claimed configuration has improved range of motion over the prior art due to the diaphragm portion arrangement. In other words, the motor as disclosed in *Devenyi* having the pin arrangement illustrated in Figure 6, does not have an improved range of motion resulting from the claimed structure. (see Summary of the Invention).

Claims 1, 9 and 17 are therefore novel in view of the cited prior art. For at least the same reasons, dependent claims 4, 5, 10-13, and 8-22 are also novel and non-obvious.

IX. Appendix

A copy of each of the claims involved in this appeal, namely claims 1-5, 9-13 and 17-22 are attached hereto as Appendix A.

X. Conclusion

For the foregoing reasons Appellant respectfully requests that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Respectfully Submitted,

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APPENDIX A

1. An iris, comprising:

a stator assembly comprising a frame coupled to an electrically wound substantially annular magnetic core;

a rotor rotatably coupled to said substantially annular magnetic core and defining a channel; and

a diaphragm coupled to said stator assembly comprising a plurality of diaphragm leaves pivotally arranged to form an adjustable aperture substantially concentric with said channel; a first portion of at least one of said plurality of diaphragm leaves coupled to said stator, a second portion of another of said plurality of diaphragm leaves coupled to said rotor.

2. The iris of claim 1 further comprising a body coupled to said stator assembly.

3. The iris of claim 2 further comprising a sensor coupled to said body for detecting aperture diameter data.

4. The iris of claim 3 further comprising an actuator coupled to said body, said actuator adapted to provide electrical current through windings on said electrically wound magnetic core such that said rotor rotates in response to said electrical current.

5. The iris of claim 4 further comprising a controller coupled to said body adapted to receive data from said sensor, said controller containing logic designed to activate said actuator in response to said data.

9. An iris system comprising:

a first annular member comprising a first frame coupled to a first magnetic core, said first frame comprising a sidewall, a first annular element circumjacent at one end of said sidewall, a second annular element circumjacent at another end of said sidewall, said first annular element having a first opening, said second annular element having a second opening such that a first channel is defined through said first frame;

a second annular member comprising a second frame coupled to a second magnetic core juxtaposing said first magnetic core, said second annular member rotatably coupled to said first annular member such that a second channel is defined substantially concentric with said first channel; and

a plurality of leaves adapted to rotate to form an adjustable aperture substantially concentric with said first channel, a first portion of a first leaf of said plurality of leaves rotatably coupled to said first annular element of said first annular member, a second portion of a second leaf of said plurality of leaves rotatably coupled to said second annular member.

10. The iris of claim 9 further comprising a body coupled to said first annular member.

11. The iris of claim 10 further comprising a sensor coupled to said body for detecting aperture diameter data.

12. The iris of claim 11 further comprising an actuator coupled to said body, said actuator adapted to send electrical current through windings on said first magnetic core such that said second annular member rotates in response to said electrical current.

13. The iris of claim 12 further comprising a controller coupled to said body adapted to receive data from said sensor, said controller containing logic designed to activate said actuator in response to said data.

17. The system of claim 9 wherein said first magnetic core is coupled to said sidewall.

18. The system of claim 9 wherein said first magnetic core is coupled to said second annular element.

19. An iris system, comprising:

a body;

a stator assembly, coupled to said body, comprising a frame coupled to an electrically wound substantially annular magnetic core;

a rotor rotatably coupled to said substantially annular magnetic core, such that a channel is defined;

a diaphragm coupled to said stator assembly comprising a plurality of diaphragm leaves pivotally arranged to form an adjustable aperture substantially concentric with said channel; a first portion of at least one of said plurality of diaphragm leaves coupled to said stator, a second portion of another of said plurality of diaphragm leaves coupled to said rotor;

a sensor coupled to said body for detecting aperture diameter data;

an actuator coupled to said body, said actuator adapted to provide electrical current through windings on said electrically wound magnetic core such that said rotor rotates in response to said electrical current; and

a controller coupled to said body and adapted to receive data from said sensor, said controller containing logic adapted to activate said actuator in response to said data.

20. The iris of claim 19 wherein said body comprises a telescope.

21. The iris of claim 19 wherein said body comprises a camera.

22. The iris of claim 19 wherein said body comprises a pipe.